

Effects of Music on Brain



Education

KEYWORDS : Music, Calmness, Brain, Relaxation

Dr Sanjay Sharma

DAV College, Amritsar (India)

ABSTRACT

When the mind is fully concentrated on anything there arises a feeling of inner bliss. Music is harmony of sounds which can totally engross our minds and can give us state of relaxation. This is why we all enjoy listening to music. Music activates certain regions of brain which increases the efficiency, intellect of brain. Different types of music have different effects on brain and it is ultimately the brain which commands our body. We human beings are having thousands of thoughts daily, out of these only few are worth while other are sheer wastage of time and energy of body. The brain utilizes 20% of total energy of our body. While listening music, brain is not involved in wasteful expenditure of energy, so we feel energetic and mind can have thoughts which are worth thinking. Always good quality of music which suits according to our requirement may be preferred.

Persons from all region of this universe are influenced by music. Every society history has some form of music. The earliest forms of music were probably drum-based. Rocks, sticks were being used as instruments at the time. These simplest of simple instruments are thought to have been used in religious ceremonies as representations of animals. And also some complex instruments as bone flutes, jaw harps and percussive instruments were being used long ago in the earliest civilizations (Weinberger, 2004). Nowadays for music many electronic gadgets are being used which are supported by variety of digital appliances. Each time we hear music, we get inspiration and delight. It is for this reason all the sects who propose different ways to meditate are using music as vital part of their techniques.

Aristotle advocated that music can restore health and normalcy to those who suffer from uncontrollable emotions and compared it to a medical treatment (Gallant & Holosko, 1997).

Today music is used in many hospitals to help patients relax and help relieve or ease pain and anxiety. Music is also commonly used in counseling (Gallant, W., & Holosko, M.1997) The ancient Greeks assigned the God Apollo to reign over both music and healing (Trehan, 2004).

Nature of music has different effects on brain. For instance, high pitch, acceleration of rhythm, and ascending melodic passages are all generally felt to increase anxiety and tension and sometimes even lead to loss of control and panic (Lefevre, 2004). Inversely, music with low pitch generally produces a calming effect. Furthermore, music has been found to reduce pain and anxiety (Hendricks, Robinson, Bradley & Davis, 1999). It has been shown that Postoperative patients have positive effects of music (McCaffrey & Locsin, 2004).

Music acts as a catalyst for transcending many dimensions of a person's life such as the cognitive, affective, behavioral, social and spiritual (Gallant and Holosko, 1997)

Music influences humans both in good and bad ways. These effects are instant and long lasting. Music is thought to link all of the emotional, spiritual, and physical elements of the universe. Music can also be used to change a person's mood

Listening to music is helpful for low- and moderate-intensity exercise because it competes for our brain's attention, and can help us to override those signals of fatigue. Music can actually help us to use our energy more efficiently. A study showed that cyclists who listened to music required 7% less oxygen to do the same work as those who cycled in silence. During high-intensity exercise, music isn't as powerful at pulling our brain's attention away from the pain of the workout.

Music in brain; when Normal sound waves enter the cochlea (inner ear) it sort complex sounds into their elementary frequencies, and then transmit them to the auditory cortex as trains of neural discharges via separately tuned fibers of the auditory nerve. The auditory cortex is in the temporal lobe. Here specialized cells respond to certain frequencies.

However, the brain's response to music is more complex. Instead of interpreting each tone individually, the brain groups the sequences of tones together and identifies the relationships between the sounds. This involves many more areas of the brain than those aforementioned (Weinberger, 2004).

Music canters in the brain: Music activates many areas throughout the brain. Several of these areas are also involved in other types of cognition. Music activates slightly different areas in each individual's brain (Weinberger, 2004).

In recent times, neuroscience has discovered activations in at least 18 areas of the brain during performance of specific tasks in making or hearing music (Perrett, 2004).

Some centres of the Brain which are activated by music are CORPUS CALLOSUM(harmony of left and right brain),MOTOR CORTEX(foot tapping, dancing), PRE-FRONTAL CORTEX(creations of expectations), NUCLEUS ACCUMBENS(emotional reactions to music), AMYGDALA(emotional reactions), SENSORY CORTEX(dancing), AUDITORY CORTEX(analysis of tones), HIPPOCAMPUS(musical experiences), VISUAL CORTEX(looking at a performer's or one's own movements), CEREBELLUM(emotional reactions and dancing)

Effects on brain

When a person experiences thrills while listening to music, the same pleasure centers of the brain are activated as if they were eating chocolate, having sex or taking cocaine (Blood & Zatorre, 2001).

Simultaneous left and right brain action maximizes learning and retention of information. The information being studied activates the left brain while the music activates the right brain. Also, activities which engage both sides of the brain at the same time allows the right and left brain hemispheres to work in harmony(integration) rather than in conflict, (such as playing an instrument or singing). It causes the brain to be more capable of processing information.

One of the major music centers in the brain is part of the middle mammalian layer of the brain, which is also important in emotions. Developing the middle brain leads to better attention maintenance skills, memory, motivation, and critical thinking skills (Snyder, 1997).

A person who is listening music can have Synesthesia that means he may see a color, smell something, experience a taste, or feel a change in temperature according to music.

Music stimulates the production of alpha and theta waves in the brain. Big bursts of alpha brain waves induce creativity. Similarly, theta brain waves are associated with the process of dreaming, states of enhanced creativity, learning, and relaxation.

Adolescents often use music to facilitate coping with loneliness and stress (Hendricks, et al., 1999).

Music has positive effects for mental illness, developmentally disabled, elderly persons, and those with multiple disabilities included addicted persons (Gallant & Holosko, 1997).

Music is often used to evoke catharsis by bringing up repressed emotions.

Although music is very good for increasing intellect, but highly repetitive music, may even detract from intelligence by distracting

Conclusions;

Music is the inner or universal language; it activates certain regions of brain which give us feeling of relaxation. Music makes pain less severe, it synchronizes the activities of left and right brain, stimulates the production of alpha and theta waves, removes stress and loneliness, increases efficiency and improves concentration. Different types of music have different effects some causes joy while some may lead to state of calmness (or somewhat sadness) and also repetitive music can cause distraction of brain.

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